DOCUMENT RESUME

ED 448 073 SO 032 188

AUTHOR	Amaro, Gertrudes
TITLE	Curriculum Innovation in Portugal: The "Area Escola"--An Arena for Cross-Curricular Activities and Curriculum Development. Innodata Monographs 5.
INSTITUTION	International Bureau of Education, Geneva (Switzerland).
PUB DATE	2000-00-00
NOTE	60p.
AVAILABLE FROM	International Bureau of Education, P.O. Box 199, 1211 Geneva 20, Switzerland; Tel: +41 22 917 78 00; Fax: +41 22 917 78 01; Web site: http://www.ibe.unesco.org.
PUB TYPE	Reports - Evaluative (142)
EDRS PRICE	MF01/PC03 Plus Postage.
DESCRIPTORS	*Curriculum Development; Curriculum Research; *Educational Change; *Educational Innovation; Elementary Secondary Education; Foreign Countries; *Interdisciplinary Approach; Qualitative Research; Statistical Analysis
IDENTIFIERS	Curriculum Implementation; *Portugal

ABSTRACT

This monograph provides a description of the curricular area "Area-Escola" (A-E), in the context of an innovative curriculum development process, presenting the history, aims, and guidelines of this curricular area and analyzing some of the results of qualitative and quantitative studies on its impact. A-E is seen as an emerging school arena for the exercise of the different school attributions and functions--cooperative teaching, curriculum development, design of assessment instruments to monitor and improve student performance, and development of school/community relationships. This paper finds its origins in the rationale for education reform in Portugal, which introduced, contrary to the theoretical and academic character of the curricular contents of the existing system, a curricular area intended to foster cross-curricular activities. Contains 30 notes, 44 references, and an annex with insights into A-E projects and practices (includes 3 tables). (BT)

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CURRICULUM INNOVATION IN PORTUGAL: THE *ÁREA ESCOLA*—AN ARENA FOR CROSS-CURRICULAR ACTIVITIES AND CURRICULUM DEVELOPMENT

Gertrudes Amaro

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Published in 2000
by the International Bureau of Education,
P.O. Box 199, 1211 Geneva 20,
Switzerland

Internet: http://www.ibe.unesco.org

Printed in Switzerland by PCL

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Introduction

Change—The days of 'instantaneous reforms' are over.
Social transformations have to be safe, gradual and assessed
—based on clear and bold negotiation.
Guilherme D'Oliveira Martins[1]

This monograph intends to provide a description of the curricular area *Area-Escola* (A-E), in the context of an innovative curriculum development process. It presents the history, aims and guidelines of this curricular area and analyses and comments on some of the results of qualitative and quantitative studies on its impact. A-E is seen as an emerging school arena for the exercise of the different school attributions and functions—co-operative teaching, curriculum development, design of assessment instruments to monitor and improve student performance, development of school/community relationships.

This new area was introduced by the education reform, which has taken place in Portugal during the last fourteen years. It has its origins in the documents that provided the rationale for the education reform.

The proposals for the elementary and secondary school curricula, organized by Group Fraústo[2], presented a new curricular design in which, contrary to the theoretical and academic character of the curricular contents of the existing system, a curricular area intended to foster cross-curricular activities was introduced.

The implementation of this reform, which was designed and piloted from 1986 to 1991 and generalized from 1992 onwards, has nevertheless suffered some problems as regards its curriculum. These were due to the inertia of schools and teachers, caused both by the political system prior to the 1974 Revolution and also by the anarchic overlapping of curricular theories implemented in the following years. This, as Roldão puts it, 'gave rise to a chaotic process of incorporating several theoretical perspectives into the curricula, causing an acritical reproduction of practices or an inconsistent adhesion to each new curricular 'fashion' introduced by administrative rather than by formative ways' (Roldão, 1999, p. 19).

The notion that the school and its actors are privileged agents has increasingly been supported both by theories for the creation of a learning society and also by the need to develop student competencies that make the integration of knowledge and skills possible. Enabling students to use intelligently what they have learned in situations that increasingly approximate those of real life and

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adult work experience is another important dimension. This notion has brought about the urgency to create a curricular space that could simultaneously contribute to the design of interdisciplinary projects by students and be an area of reflection on a syllabus that fosters co-operative work among teachers.

This latter dimension, which is indeed far removed from the professional practice of most teachers in Portugal, has timidly emerged and has been gaining momentum in some schools through the development of training seminars (using action-research) (Benavente et al., 1995).

The curricular space A-E has been an unprecedented innovation in the elementary and secondary education curricula, although it has given rise to some controversy as to its status in the curriculum. It has also had to confront dynamics of working which were better suited to other dimensions of school life, such as extra-curricular activities.

In the several existing school structures[3] (school board (pedagogical council) departments, teachers and classes), A-E has spurred the debate on project design, management forms, resource organization and school/community relationships. The difficulties arising from a new perspective on curricular management, as regards the purposes, aims and methodology of this new dimension of the curriculum—namely interdisciplinarity and its management by the departments—and resource organization and student assessment within the context of multidisciplinary work, have led the schools to performances that have not always corresponded to the educational paradigm that gave birth to A-E.

* * *

This monograph is an extended and modified version of a document originally presented at the Selmun Seminar, which took place in Malta in June 1999. The publication rights of the original document 'Curriculum innovation at compulsory education level in Portugal—the curricular Área-Escola' belong to Ronald Sultana, who is editor of the publication *Challenge and change in education: case studies from the Mediterranean Region*. Malta, CEP, 2000.

ACKNOWLEDGMENTS

I would like to express my thanks to all the members of Departamento de Avaliação do Sistema Educativo within the Institute for Educational Innovation for their support during the development of this work, especially to Joana Gião, Carla Ferreira and Manuel Barroso for their assistance in carrying out the research. A final word of thanks goes to the authors of some of the quoted case studies with whom I had the opportunity to discuss results before preparing this document.

The pre-existing conditions for the reform of the education system

THE NATIONAL SOCIO-ECONOMIC CONTEXT

The situation of the education system in Portugal in the 1980s and 1990s is presented by Stoer and Araújo as coming from the semi-peripheral position[4] that Portugal occupies in the European context. This specificity, from the social, political, economic and cultural points of view, accounts for mediator roles between the centre and the periphery; in general terms, it means lagging behind in capitalist production relations, but having consumer patterns similar to those in the dominant countries of the centre. For these authors, the building and maintenance of a democratic society in Portugal depend on the vital role of education and culture. This emphasis is supported by the fact that 'Portugal has undergone uneven development and the relatively unstable production relations have forced the state to perform a central role in regulating the economy and in the consequent social control and legitimation' (Stoer & Araújo, 1991, p. 206). On the whole, the state's educational policy is referred to as mediated by the hegemony of intergovernmental organizations, such as OECD, the World Bank and the European Union, although 'there has arisen, more recently, a process of interpretation and national absorption that determine its eventual application' (ibid., p. 206).

EDUCATION

After 1974, the scope and scale of Portuguese elementary and secondary education changed dramatically—student enrolment increased enormously, new school buildings had to be erected, and new teaching staff had to be hired and trained. The then existing structure was unable to meet the demands of this mass education, leading to the need for education reform. By the mid-1980s, the urgency for restructuring and reorganizing education had become increasingly apparent, and the acknowledgement of general principles, such as the universal right to education and culture, real and equal opportunity for all, preparation for good citizenship, lifelong learning and social development, laid the foundations for a new national educational policy, requiring that the education system meet the needs of a society entering the twenty-first century.

The adoption of the Education Act in 1986 was the first landmark of the ongoing education reform in Portugal. The Education Act set up the guidelines for restructuring and re-organizing the school system. These guidelines were used as a framework for developing a Global Proposal for Education Reform, completed in 1988. This proposal led to a surge of legislative activity aimed at bringing about the necessary changes in the education system.

CURRICULUM DEVELOPMENT

The study group (Group Fraústo) that was responsible for the organization of the new curricular plans based their work on a number of studies[5] supporting the reflection on, and definition of, objectives in the re-organization of the curricula. They stated that any proposal of curricular reform would have to wrestle with four problem areas in the context of curriculum development: 'the inexistence of structures responsible for the guidance, support and co-ordination of any curriculum development process; excessive centralism in the decision-making process, hindering the surge of innovative experiments that could contribute to a better adequacy to local conditions; lack of investment in the organization of local and regional networks that could support teacher training; and unavailability of didactic resources and materials rendering the realization of pedagogical guidelines impossible' (Fraústo da Silva et al., 1987, p. 186). As for the existing formal curriculum, the Group mentioned the absence of vertical articulation between the various grades, the incoherence of aims and goals and the consequent lack of relevant and significant criteria for the selection of the areas and content of the syllabi.

These weaknesses led to a wider gap between school and life outside it, to excessive academic knowledge (to the detriment of acquiring competencies enabling students to transfer and apply cognitive acquisitions to new situations), and to an undervaluing of education for citizenship. Still other important aspects can be added: the organization and management of schools, seen 'as monolithic because the participation of local entities (human and financial resources, experiences, space) is not encouraged; the failure to define several educational functions; and excessive teacher mobility that does not allow the creation of effective educational teams' (ibid., p. 188). It was therefore assumed that all of these factors would, from the very beginning, limit the social expectations regarding the educational action of the reform.

The search for innovation

The purposes and priorities shaping innovation and change in the Portuguese curriculum design are described by OECD/CERI (1998) as an example of stated purposes for education and its moral and social attributes, defined by countries in order to facilitate the creation of lifelong learning societies:

The dominating principle in Portugal is the notion of education as a universal right. All curriculum documents reflect the necessity of providing adequate cognitive methods and ensuring that learning should be student-centred. [...]. Typically, the curriculum includes general objectives for each cycle, specific objectives for each discipline or subject area, sequences of contents and recommendations for practice, including pedagogical directions and suggestions for activities to be developed by teachers. At the school level, teachers are responsible for organization and management with a certain degree of flexibility. Though Portugal is a mainly Catholic country, a tradition of secular education prevails, and ethical issues are presented in the curriculum from a non-religious perspective. The 1989 Education Act[6] defines a cross-curricular area of personal and social education to be implemented at four levels: in every curriculum area or discipline; in interdisciplinary inquiry based on projects and themes; in extra-curricular activities; in a separate curriculum element, termed 'Personal and Social Development' that is offered as an alternative to the moral and religious education, chosen predominantly by Catholic students (p. 45).

OECD/CERI also underscores that 'the conventional subject boundaries in the school curriculum reflect long-standing academic traditions, but are being displaced by cross-curricular approaches, and by increased attention to the applications of knowledge, in the search for greater inclusiveness' (ibid., p. 45).

The curricular area—*Área-Escola*

As stated in the Education Act, the new curricular plans, both for elementary and secondary education, revolve around the following guidelines: 'the promotion of school and educational achievement, the integrative sense of educational acquisition, participation in educational activities, and lifelong learning education' (OECD/CERI, 1998, p. 189). The last two items emphasize, on the one hand, the harmonious combination of syllabus areas and contents 'in a cumulative process of acquisitions oriented towards the elaboration of significant syntheses' (ibid., p. 191) and, on the other hand, the fact that the educational act depends not on formal curricular activity alone but, significantly, on the level of teacher, student, family and community participation. It is therefore in this context that the new curricula—of which A-E is a part—arise, under the assumption that schools should assert themselves as the principal managers of their curriculum and that their global projects should support the articulation with the above-mentioned agents.

AIMS AND GUIDELINES

A-E, introduced in the schools not as a curricular subject, but as a curricular area, aims at developing skills which promote the connection between school, community and the students' personal and social development; it should be part of the content of the different curricular subjects and promote interdisciplinarity.

Goals

Specifically, A-E must fulfil the following goals:[7]

- transmit and develop knowledge from an interdisciplinary perspective;
- enable work tools to be acquired and facilitate exercising cognitive operations;
- adopt a lifelong-learning perspective;
- sensitize students to the importance of issues related to the school environment;
- approach and treat relevant and current themes;
- integrate knowledge acquired via the parallel school;[8]
- articulate theoretical knowledge of teaching subjects and its application;
- develop initiative, organization, autonomy and solidarity;
- sensitize students to the preservation of national identity and values, in the context of: (a) European integration; and (b) the promotion of citizenship.

Guidelines

A-E should be conceptualized and developed taking into account:

Interdisciplinarity
Teaching subject-by-subject, a feature of the Portuguese curricula at all school levels over past decades, has contributed to the lack of interdisciplinarity throughout the whole school system.[9] It may therefore be desirable to promote the integration of the separately acquired knowledge and skills so that several subjects can be seen as global learning, leading the students to integrate skills by connecting them. From the conceptual point of view, A-E puts interdisciplinarity into practice, because a project must be developed based on a topic or theme, a situation or a problem involving several school subjects;

Students' personal and social development
The activities making part of the context of A-E aim at developing attitudes and competencies, which are fundamental to the all-round development of students, such as self-determination, creativity, a critical mind and the acquisition of competencies in the field of collecting, processing and using information;

Connecting school and community
By connecting school and community it is intended to sensitize students to the problems of the surrounding community. Contacts and experiences with the community outside the school make possible a closer relationship between the two, increasing students' awareness of, and active participation in, community life. In this sense, students and teachers should not be the only ones to participate, but also parents, local authorities and those representing the economic, social and cultural sectors of the community.

PLANNING AND IMPLEMENTATION

The A-E should be developed by activities organized in project work format (henceforth referred to as A-E projects). School boards and pedagogical councils are responsible for promoting A-E projects by defining the general aim of A-E in the context of the school annual plan, identifying resources available both in the school and in the local community and monitoring and assessing the programme. Each school, according to its educational project and autonomy, establishes an organizational model for this area embedded in the student curriculum without a specific schedule for its development, and always aiming at interdisciplinarity.

Teachers are supposed to plan together the different tasks of the A-E projects based on students' initiatives and proposals. Students choose their tasks, work together to carry them out and self-assess the results. Teachers co-ordinate, monitor and assess the work.

ASSESSMENT

Assessing A-E includes three dimensions: assessing the development of the A-E projects; assessing students' performance and assessing the A-E programme.

Assessing A-E projects

Assessing the development of A-E projects is done in three different stages: initial, intermediate and final.

(a) The initial assessment is done by the teachers and by the school or Pedagogical councils. When the proposals for A-E projects are completed, teachers will evaluate their aims and feasibility in the context of the different topics and subject matters they teach and in accordance with the students' knowledge and skills. The school council (or pedagogical council) will assess the necessary human and material resources, the adequacy of the A-E projects in relation to the aims of A-E, and the articulation of the global A-E programme to the school's annual plan and to the pedagogical conditions of the school and the surrounding community.

(b) The intermediate assessment is done by each of the teachers involved, regarding the specific A-E project tasks assigned to them and by the Class councils (or the groups of teachers who carried out the A-E projects). These groups of teachers will assess the development stages of the A-E and the students' and teachers' participation. The data gathered will be the basis for a report on the progress of the global A-E programme. This written report will be presented to the School council (and to the pedagogical council) by the middle of the school year.

(c) The final assessment is twofold. It addresses the contribution of the projects to the students' achievement, based on the assessment carried out by the teachers involved, and the A-E programme as a whole. Each class council is responsible for evaluating to what extent the A-E projects contribute to the students' attainment of the goals stated for A-E. The pedagogical council is responsible for assessing the A-E programme in its entirety.

Assessing students

The time allocated to the A-E projects in each class must vary from 100 to 110 hours of school work during the year. The students' school timetable and the

distribution of school hours allocated by each subject to the A-E project will be defined by the class teachers and/or the class council, according to the A-E project to be developed and the learning activities planned. Student assessment and reporting on each curriculum subject has to be planned taking into account both the specific learning activities of each subject's content and the A-E project activities. In short, grading in each curriculum subject must include students' outcomes in both A-E and the curriculum subject. Performance standards, categories and criteria and reports are to be developed by school departments, class councils or teachers.

Assessing the A-E programme

The A-E programme results must be mainly centred on the students' performance regarding the aims and methodologies stated for this new curricular area. The rationale for the assessment procedures is anchored in the aims of the new legislation regarding evaluation. Specifically, the new student performance evaluation system embodies, on the one hand, the principles and goals to be achieved by elementary and secondary education, respectively:

To ensure general education for all Portuguese, conducive to discovering and developing their interests and aptitudes, to fostering their memory, reasoning and critical powers, their moral and aesthetic values, their creativity, and to promoting their becoming fully-fledged citizens in harmony with the values of social solidarity' and 'to ensure the enhancement of student capacity for reasoning, critical thinking and scientific curiosity, and the extending of the aspects of a humanistic, artistic, scientific and technical culture, which support the cognitive and methodological structures needed for further learning and for entry into the community' (Portugal, Assembleia da República, 1987, p. 16).[10]

On the other hand, it takes into consideration the purposes of evaluation—namely, 'to encourage educational achievement at the level of every individual student, to raise self-confidence, and to account for individual differences in learning pace and progress as well as to ensure quality control of the education system' (Portugal, Despacho Normativo 98-A/92, 1992, p. 2908).

The new curricular features of A-E require new models of assessing student performance that could reflect, for instance, the development of understanding as meaningful, effective, in perspective, empathic and reflexive. According to Wiggins:

Reforms must not be constructed as simply throwing out the old and thoughtlessly embracing the new. It is not about choices that exclude one another but about wise use of all available techniques of assessment. We must correct the

woeful overuse of simple test exercises and make sure that assessment is always focused on students' effective performance, in which they use their judgement and repertoire of skills, learning and understanding rather then mainly plugging what they have learned into artificially neat and clean exercises (Wiggins, 1998, p. 114).

From the OECD point of view:

Trends in assessment practices interact with trends in curriculum change. As innovations develop, it is normal to evaluate the ways in which students respond: it is important also to explore how assumptions or actions about assessment practice are shaping the development, or are being shaped by its impact (OECD, 1998, p. 80).

In summary, it can be said that there is a need for developing assessment procedures and standards that are more closely tied to assessment tasks, problem-solving or projects. Furthermore, assessment needs to be considered as being dual purpose, inasmuch as it is educative (in the light of the purpose of schooling) and a means to self-regulate teaching and learning.

The *Área-Escola*: paradigms and controversies

The introduction of A-E in the curricular reform generated controversy, basically around the discussion of what the experts call 'the real or apparent dichotomy between two school paradigms, in relation to the overall student curriculum, one based on extra-curricular activities and the other supporting project work in a curricular perspective' (Costa, 1996). This controversy is explained by Niza (1995), who refers to the Group Fraústo's proposal (the proposal to introduce A-E) as the enlargement of a curricular component far beyond the so-called 'tasks' identifiable as the *regional components*[11] and even including topics of personal and social development, conflicting with the concept of the cultural school defended by Group Patrício (Patrício, 1987), mentor and supporter of the first paradigm. The *cultural school* is based on a model of a pluri-dimensional school, which includes the development of curricular contents and regional components, through extra-curricular activities that interact, extend and support teaching practices.

Later on, the Conselho Nacional de Educação (CNE—National Education Council)[12] interpreted the divergences between the two paradigms as being the result of different approaches to the organization and functioning of extra-curricular activities at the school level. Nevertheless, Costa (1996) considered the debate inconclusive, pointing out that 'the arguments in favour of one or the other of the paradigms are equally attractive and they have not as yet been proved as mutually exclusive'. He also added that any controversy generates solutions and that these are desirable, provided 'there are no refusals, either deduced or conditioned by motives unrelated to science or pedagogy'.

This debate regarding the two paradigms is an important contribution to our understanding of teachers' reaction to A-E. Caria (1995) refers to the existence of a conflict between the *new institutional demand* and the teachers, which is based on the confrontation between the intended reform innovation and current practices. Specifically, he pointed out that it is important to bear in mind how teachers' practices reflect this conflict. Teachers see A-E as a broad area, i.e. generally referring to all the non-subject-matter activities—extra-curricular activities and occasional events—generated by their subject-matter group/department. These activities may include occasional collaboration with teachers of other subjects and they can potentially open the school to the local community, namely as regards club activities, school field trips, presentation of the best projects in the most expressive subjects, end-of-term or end-of-year festivities, etc. Although these activities may brighten up school life throughout the school year, they should not be mistaken for A-E activities.

Despite this lack of focus on the part of teachers in A-E just described, in practice teachers have been in some cases able to develop projects that fairly adequately adhered to the prescribed A-E paradigm. To illustrate this, we will describe some aspects of the project *Life rhythms and cycles* implemented in an EB 2/3,[13] which are based on a full description of the project by Borzee & Sarmento (1995). The title of the project arose from the symbiosis between the science topics chosen by the students and the subject 'Music', which served as 'a nucleus connecting the activities of investigation developed in science with poetic and creative writing experiments in Portuguese'. Teachers' participation in the project design is presented as being the result of interplay between a proposal coming from the first class council of the school year and the students' motivations, followed by *structuring the interdisciplinary project*, trying to make the goals and activities to be developed compatible both with the syllabi of the different subjects involved and the guidelines of the school educational project, which aimed at developing personal identity, strengthening the school/community relationship and the all-important parental involvement. Implementation of the project followed a pre-existing logic and, although we do not have any data regarding time management in terms of the students' curriculum, we welcome the successful linking of music, Portuguese and science—by producing texts and songs and by performing them, they managed to carry out an experiment of curricular development based on the interconnection of different types of knowledge and skills.

Any follower of the cultural paradigm can find in this example, developed under the A-E paradigm, one of its most relevant purposes as regards the role of the school—to wit, the purpose of 'transforming the human being from a *natural being* into *a cultural one* through culture generating spiritual activity' (Patrício, 1996). In conclusion, practice does reveal that the two paradigms are not necessarily opposed, in spite of the fact that the cultural paradigm focuses on extra-curricular activities whereas the A-E paradigm tends towards the different dynamics of curriculum development. Further examples of A-E projects are provided as an annex to the case study.

It is obviously necessary to go beyond this discussion of paradigms to analyse A-E from the perspective of a much broader debate on traditional educational practice. Niza (1995) as well as Jesus and Xavier (1996) refer to the difficulty in reconciling the A-E paradigm with the constraints imposed by current norms in educational structure and practice. The intended *modus operandi* and the practices of the educational actors, especially as regards school boards, pedagogical structures and teachers are analysed by these authors. Niza states that there is a disciplinary and administrative logic in the design and implementation of A-E projects, which pertains in schools and gains momentum in the strategic intentions and principles decided by the pedagog-

ical councils. This logic subverts the historic challenge of A-E to create other alternatives of pedagogical culture and, consequently, it is important that other forms of organization and participation should be created in the schools, with bottom-up procedures that allow the work initiative of A-E coming from classes with their teachers to reach the planning and co-ordinating structures. For Jesus and Xavier (1996) designing and making this area operational has faced several different obstacles and many schools have mistakenly taken it for extra-curricular activities. They refer to the results of the study by Kirkby and Barão (1993) and point out two of the innovation's most negative aspects: the frequent discrepancy between the project theme of A-E and the pre-established syllabi for curricular contents; and the lack of time for carrying out activities in this area. The most frequent problems reported by these authors are: a lack of time for A-E activities mainly due to the many tasks that have to be done and the pressing need to teach all of the syllabi, which are too extensive and give the teacher little autonomy; unfavourable working conditions, especially due to the lack of material and financial resources to implement the legal guidelines; the lack of motivation on the part of the teachers and the difficulty in adapting the syllabi to the theme chosen to be developed in A-E. They also cited as problems: a lack of information and training; the need for a better understanding of the possibilities arising from the syllabi of the other subjects (a relevant factor in implementing interdisciplinarity); and teachers' unfamiliarity with team work and co-operation.

Monitoring curricular innovation: an endless endeavour

Along with launching the reform, the Ministry of Education has also defined schemes to monitor and assess it, with a view to identifying and analysing problems arising from its implementation. The experimental period of the curricular plans (which took place between 1989 and 1991) involved its monitoring by experts, the holding of several training seminars for teachers involved in the experiments and carrying out studies to analyse the reform strategies and policies (surveys and case studies) (Portugal, Conselho Nacional da Educacão, 1994, p. 23). At the same time, some programmes supporting research in education[14] cite as priority research areas, action-research and pedagogical innovation in the context of curricular and organizational development at elementary and secondary school levels (Instituto de Inovação Educacional, 1992, p. 7).

ASSESSING THE A-E EXPERIMENTAL PHASE

In 1994, the Conselho Nacional da Educação (CNE—National Education Council) published a report on the experimental phase of the new curricular plans and particularly on A-E. The report by the Conselho Nacional da Educação (1994) was written on the basis of studies and evaluations of several scientific, pedagogical and/or professional associations and also on reports from various entities involved in the implementation of the reform—Instituto de Inovação Educacional (IIE—Institute for Educational Innovation), departments of the Ministry of Education, Inspectorate, monitoring committees, schools, etc.—and gives information on the A-E experimental process in the following areas:

(a) *Implementation/methodological directions*

According to the CNE report, the implementation processes enunciated by Group Fraústo for A-E caused 'clear disappointment in most teams and in some external observers, which partly justified the need for the rewriting of the respective methodological guidelines' (ibid., p. 34-35). The Ministry of Education later published the implementation plan, the organizational model and development suggestions in the context of school autonomy regarding A-E.

(b) *Curricular innovation*

The report made the following observations:

Some teachers considered that the A-E paradigm, with its curricular and compulsory nature, plus the area of curricular complement activities (non-compulsory), seems to have advantages over the Cultural School[15] *paradigm, which is centered on extra-curricular activities [...] Being an area in which almost all the curricular development has to be done in the school instead of outside the school, as happens with the other curricular areas and subjects, some special difficulties are likely to arise. This is due to the fact that the whole school organization is only programmed to carry out separate, ready-made chunks of work locally [...] There are visible effects, principally at primary school level—in the involvement of the various stakeholders, in achievement and student development and in relationships with the community (ibid., p. 18).*

(c) *Teacher training*

With regard to teacher education, the report observed:

Teachers think that total attainment of the goals expected for this area is not possible without more precise and explicit recommendations for the activities to be developed in that context [...] its development has been mainly conditioned by lack of guidance, lack of teacher training and resources [...] it all starts with not knowing how to motivate teachers to work as a team, besides the difficulty of finding a place and, most of all, an occasion to get them together [...] then there is fear of not being able to teach the whole syllabus of each school subject, because of involvement in multidisciplinary projects. It is also true that the fact that all curricular development is based on separate school subjects makes it difficult to overturn this logic, as A-E should. Moreover, it is also problematic to consider non-cognitive goals and to assess the students in terms of these goals (ibid., p. 83).

The report concludes that 'everything goes against the necessary conditions for joint curricular production at school; nonetheless, A-E provides a good opportunity to test curricular autonomy in the school' (ibid., p. 83).

SUPPORTING TEACHERS' PROFESSIONAL DEVELOPMENT IN FAVOUR OF INNOVATION

The reform of the education system foresaw the ongoing professional development of teachers within the context of increasing school autonomy. In broad terms, this means that there was overall consensus that 'schools tend to be increasingly recognized as a privileged place of analysis and intervention in the educational system, which call for new ways of thinking and acting in the school context and, as such, reinforcing the strategic capacity of schools

seems to be the key for favouring permanent and autonomous dynamics of change at the local level. These dynamics are what make it possible to go from a reform logic (top-down change) to an innovation logic (bottom-up change)' (Barroso & Canário, 1999, p. 14). The teachers' professional development, based on 'training strategies valuing the reflexive dimensions of negotiation and contextualization' (ibid., p. 15) and aiming at curricular innovation is a constant in the whole reform rationale.

The answer to the paradigms underlying the development of the reform has been the creation of an in-service training system for teachers at national level based on different training modes and given by different training entities. The following are considered as training entities: the Central Administration; Associations/Unions; the Polytechnic; Universities; and the School Association Centres. The training offered by institutions in 1993 had very varied dimensions, the School Association Centres being the most significant—62% of the total number of seminars/courses, involving 53.5% of all trainees (ibid., p. 36). The School Association Centres, created in the school year 1992-93, based on the association of schools and with territorial characteristics, try to be a more effective and strategic answer to in-service school-based training and constitute an innovation in the logic of teacher training in Portugal.

However, some data on the training areas currently being offered by higher education institutions inform us about the difficulties encountered, namely as regards providing essential training for implementation of the reform. As stated in Barroso and Canário (1999), 'There is a gap between what is stated and what can be put into practice by the training entities' (p. 63). Training focuses first on upgrading scientific knowledge, followed by didactics and methodology; training in non-curricular areas and in school systems comes in a very secondary position. This dominance 'reveals both a concept of the teacher as an expert in a specific area of knowledge limiting his/her action to the classroom, and an instrumental and adaptive notion of training' (ibid., p. 68). We can therefore assume that the training offer has not adequately met the demands; the development of innovative practices as proposed by A-E has not been fostered as it should have been and has not corresponded to the needs felt in this area.

Another image of the training offer regarding A-E comes from analysing the financing priorities for training as stated in the context of programme FOCO.[16] This analysis shows that only from 1994 onwards were courses on A-E considered a priority (Fonseca, 1997). The data collected on the training offered for this programme also reveal how insufficient in number these courses still are: fifty-seven courses in 1997 and one in 1999, representing about 2% of the total number of courses (Martins et al., 1999).

Building up knowledge about A-E in the curriculum

Knowing that schools are slow to change, it is important to study the impact of such a curricular area as A-E, inasmuch as it stresses a new role for the school within the community, a more varied pedagogy, the reinforcement of the schools' capacity to help teachers to become more effective, the alignment of assessment procedures with the curriculum aims and goals and the allocation of resources. The specific characteristics of this new curricular area also call for analysing the ways in which the schools have organised themselves in order to enable the projects to achieve their goals.

THE STUDY

Since its introduction into the curriculum, A-E has been the object of several case studies and in 1998 a national survey[17] was conducted. To date, however, the data from both qualitative and quantitative research has not been confronted and our discussion will thus be based on a multidimensional approach—surveys *versus* case studies.

The assumption is that the results could contribute to the analysis of the impact and evaluation of this innovation as well as mediate the required changes in this new curricular area. The analysis addresses the impact and evaluation of A-E anchored in the cultural perspective of innovation (House, 1988, quoted by Rodrigues, 1993) and in the approach described by Berg, Vandenberghe & Sleegers, 1999 as a cultural-individual perspective on innovation within the functional areas: *schools as organizations; the teacher; and interventions.*

In the A-E context, the first two functional areas are important: schools as organizations, as regards autonomy, innovative capacity, dynamic management and interactive decision-making; and *the teacher,* from the perspective that teachers are the key element to convert stated innovation goals into real practices, this being their role shaped by their personal systems of knowledge, skills, and attitudes in regard to their work (Berg, Vandenberghe & Sleegers, 1999).

STUDY QUESTIONS

The analysis is carried out within the framework of the above-mentioned curricular reform aims, the A-E organizational model and paradigms, and controversies raised by school practices.

The focus will be on how schools approach A-E regarding its design and implementation, evaluation procedures, and the extent of attainment of A-E goals concerning interdisciplinarity, the students' personal and social development and school/community relationships. It specifically addresses the following questions:

Designing and implementing A-E

- What are the main features of the design of A-E concerning school organisation?
- What are the characteristics of A-E projects and products?
- What are the difficulties faced by schools when implementing A-E?
- How do schools organize to integrate assessment procedures identified for A-E with established assessment practices?

TABLE 1. Case study: main description

Case studies	α	β	μ
Author(s) and designation	IIE, 1992: A-E: One-year experience	Branco & Figueiredo, 1992: A-E: A case study	Mateus, 1995: A-E: Environmental education and innovative pedagogical practices
Aims	Analysis focused on the process of implementation and concretization of A-E projects based on the 1990/1991 projects	Describing and analysing the perceptions of the A-E participants Studying the implementation and development process and the changes it brings about	Identifying changes in the educational agents' awareness of the importance of the school/community relationship; Identifying students' participation in decision-making and solving local problems; Reflecting on solutions to improve A-E
Analysed dimensions	Participation of executive committees pedagogical committees, teachers; Assessment activities; Students' perceptions of A-E; School/family relationship and the role of A-E	Assessment; Operationalization; Implementation; Participation of different agents; Difficulties	Interdisciplinarity; Implementation; Integrating students in the community; Environmental education; Difficulty in implementing pedagogical practices
Population	Lower secondary (nineteen schools)	Lower secondary (one school)	Primary and 5ª–6ª grade (two schools)
Informants	Teachers (25); Students (91); Educational community (37) Documents: Pedagogical council; Class council board; Class council	Pedagogical council; Class council; Teachers (19); Parents' association; Parents; Students; Local authorities; Regional educational department	Students (45); Heads of class; Teachers; Cultural section of the local authority; Environmental education section of a local park

- How do schools organize to help teachers become more effective?
- What resources have schools identified as supporting A-E issues?
- To what extent does A-E introduce innovation in schools as regards addressing new areas of development, new strategies to be implemented and the analysis of student outcomes and follow-up procedures?

Developing school-community relationships, cross-curricular work and the students' personal and social development

- What are the main features of the school-community relationship?
- To what extent does interdisciplinary work emerge from projects aiming at fulfilling A-E goals?
- What evidence comes from A-E concerning students' personal and social development?

π	δ	λ
Gonçalves, 1998: A-E design and implementation in EB 2/3 school	Figueiredo, 1998: A-E: Seven voices, seven routes in lower secondary and secondary schools	Carvalho, 1997: Primary school teachers' attitudes and expectations regarding A-E
Describing A-E implementation process Identifying problems Characterizing outcomes	Analysing AE representation and practices	Understanding primary school teachers' attitudes and expectations regarding A-E
Participation of executive committees, pedagogical committees, teachers; Assessment activities; Students'; Perceptions of A-E; School/family relationship and the role of A-E	Religious and civic education; Interdisciplinarity; Implementing projects with/within the community	Concept of A-E; Assessment; School and community perception of A-E; School/teacher image; A-E repercussions; Obstacles
Lower secondary (one school)	Lower secondary (seven schools)	Primary school
Teachers (25); Students (91); Educational community (37); Documents from: Pedagogical council; Class council and Class council board	Executive structures (14 teachers); Students (28); Teachers (35)	Primary school teachers (128)

METHOD

The multidimensional approach—surveys *versus* case studies—will present summaries of the case studies and of the survey data, as well as the study questions.

The search for understanding the level of commitment of schools to the implementation of A-E will focus on the school structures in charge of A-E projects design, level of participation of the teachers, leadership, teacher training

TABLE 2. Case study: main features

Case studies	Assessment dimensions	Teacher training and information
α	**Project assessment:** Followed the legal guidelines and was supervised by the executive board and the pedagogical council **Student assessment:** Work done in 'A-E' contributes to final grade	Oral report sessions on the objectives of 'A-E'; Pedagogical council; Class council; Informal meetings
β	**Students:** Subject matter assessment; **Project:** Inquiry conducted among the community; Pedagogical council meetings; Questionnaires to the students and to the population	Discussion sessions on the reform; Informal meetings; Specific sessions implemented by the executive board; Informal data-collecting
μ	**Students:** orally in class, self- and hetero-assessment*	
π	**Project assessment:** Followed the legal guidelines and was supervised by the executive board and the pedagogical council **Student assessment:** Work done in 'A-E' contributes to final grade	Oral report sessions on the objectives of 'A-E'; Pedagogical council; Class council; Informal meetings
δ		
λ	**Student assessment** (Individual or group work, exhibitions, cultural events, direct observation, self-assessment) Little influence on students' final grades **Project assessment** (school council/beginning-of-year and end-of-year meetings in collaboration with the assessment team)	

* Self-assessment: the student is asked to give his/her opinion about his/her performance in the school or class activities.
Hetero-assessment: students of the same class are asked to give their opinion about the performance of the other students in class or activiti

activities, pedagogical practices and A-E assessment. The general approach will be based on the survey data and on the insight from the case studies that will be used to illustrate key features of each of the above-mentioned dimensions.

Determining the role that teachers play is of great importance in the development of innovation. To tackle this dimension, data will be analysed as regards consensus in project promotion, interdisciplinary work, school/community (relationships) and the students' personal and social development.

People in charge of project design	Project development structures	Resources
Pedagogical council; Heads-of-Class council; Subject-matter group council; Pedagogical committees; Teachers; Students;	Class council; Heads-of-Class council; Subject-matter group council; Pedagogical committees; Teachers; Students;	Parental participation in the project design; Parental participation in the final activities
Five teachers nominated by the pedagogical council; Students; Class council	Teachers' group; School board; Pedagogical board; Local authorities; Population; Students	Local authority provided logistic support to two activities; Population collaborated in testimony gathering
School council; Class council; Head of class	Head of class and teachers involved; Class council; School council; Teachers; Parents; Other staff members; Local community	Arquivo distrital CM Bragança (District Archives Town Hall, Bragança); Quercus Nucleus; Montesinho National Park; Workshops; Factories; Abade Baçal Institution; Local community; Farmers
Pedagogical council; Heads-of-Class council; Subject-matter group council; Pedagogical committees; Teachers; Students	Class council; Heads-of-Class council; Subject-matter group council; Pedagogical committees; Teachers; Students	Parental participation in the project design; Parental participation in the final activities
School board; Class council	Students; Teachers	Community; Local Government (facilities, library, financial resources, technical support, information)
	School council; Teachers and support teachers; Students; Parents; Local authorities	Didactic material; Audio-visual material; Sports material; Financial resources (facilities); Transportation; Parent collaboration; Support from local authorities and community

The case studies

The case studies summarized below are, among the identified case studies on curriculum innovation, those aimed at describing the impact of A-E in compulsory schooling in terms of schools as organizations. Qualitative in nature, they differ in methodology and informants—some of them having multi-case characteristics.

Population and aims: Tables 1 and 2 provide an overall description of the case studies. To facilitate future reference, the case studies are also designated by Greek symbols.

The national survey

The survey was conducted by the Instituto de Inovação Educacional (IIE-Institute for Educational Innovation). The target population was all primary and lower secondary schools of the Portuguese mainland working in the school year 1997/98. The data were collected in February 1998 by means of a questionnaire whose respondents were the schools' principals.

Questionnaires

The first part deals with data about the schools and schools' community, namely the background and demographic aspects of the community and their relationships with the schools, as well as with the status of the teacher and the student populations in the schools. The second part of the questionnaires is the nucleus of the investigation, aimed at observing, through different types of scales, the way A-E related procedures were implemented and the consequences of the functioning of this disciplinary area. The third part of these questionnaires deals with the aspects related to assessing the A-E projects. The last domain is about assessing students in the context of A-E.

The sample

The target population was all the primary and lower secondary schools of the Portuguese mainland. For both populations the sampling procedure applied was a replication of that used in the study Indicators on the functioning of primary schools carried out within the framework of the OECD /INES Project-Network C (OECD, 1997). Each sample was composed of 400 schools, which were selected according to PPS (probabilities proportional to size). Due to the low return rate, an additional sample (using the same criteria and comprising 200 schools) was selected. The final sample is shown in Table 3. The background and demographic information on both primary and lower secondary schools are shown in Tables 4 and 5.

TABLE 3. The final sample

School level	Sample		
	Intended sample	Responding schools	%
Primary	600	335	**56**
Lower secondary	600	431	**72**

TABLE 4. Demographic information about schools

	Characteristics of school community					
	Location (%)		Inhabitants (%)		Predominant economic activities (% *)	
Primary	Urban areas	43	Less than 1000	17	Agriculture	57
	Suburban areas	22	1000 to 5000	32	Commerce	59
	Rural areas	32	5000 to 10 000	14	Industry	57
			10 000 to 50 000	20	Services	47
			More than 50 000	12		
Lower secondary	Urban areas	67	Less than 5000	14	Commerce	71
	Suburban areas	26	5001 to 10 000	24	Services	57
	Rural areas	4	10 001 to 50 000	42	Agriculture	56
			More than 50 000	16	Industry	53

* The percentages corresponding to the activities are not exclusive.

TABLE 5. Characteristics of the primary and lower secondary schools studied

	School background					
	Teachers' period of permanence in a school (average)		Students enrolment (average)		Involvement with community partners	
					Strong	Average	Weak
Primary	One school year	3	Total no. of students:	155	• Parents • Local authorities	• Religious associations • Cultural associations • Other schools	• Higher education institutions
	From 2 to 5 yrs.	4					
	From 6 to 10 yrs.	3	Grades:				
			1st	35			
	More than 10 yrs.	5	2nd	42			
			3rd	37			
			4th	41			
Lower secondary	One school year	30	Total no. of students:	1025	• Parents • Local authorities	• Cultural associations • Other schools	• Higher education institutions • Religious associations
	From 2 to 5 yrs.	22					
	From 6 to 10 yrs.	21	Grades:				
			5th	133			
	More than 10 yrs.	23	6th	137			
			7th	140			
			8th	131			
			9th	118			

* Teachers are civil servants with different kinds of work contract depending on a yearly national contest.

DATA ANALYSIS AND DISCUSSION

As discussed in the section on 'Method', the data analysis will follow the main study questions. The data from the questionnaires used in the survey, mainly collected by using Lickert scales, were aggregated in broader categories to facilitate comparisons. The aggregation of data is intended to compare survey results with the case studies analysis and conclusions in the light of the above-mentioned study questions.

Design and implementation of A-E

According to the curricular guidelines, A-E projects are supposed to be planned by teachers and students, even though school boards and pedagogical councils have an institutional role in their implementation. The design of the projects, school structures involved and initiatives taken are described below:

- The modal year of implementation for lower secondary schools was 1992, and 1994 for primary schools, which represents an almost immediate school adherence to what the reform proposed. However, this response should not be regarded as willingness to innovate or as a consequence of autonomy, but merely as having to abide by the new legislation.
- The main features of project status and initiatives among school actors are displayed in Table 6.
- Table 7 shows characteristics of project processes and products.
- The degree of involvement of the school actors in the design and development of the projects is presented in Tables 8 and 9.

TABLE 6. Project status and initiative

	Project status				
School level	1st year of implementation	No. of projects per grade (mode)	No. of teachers per grade (average)	Project initiative among school actors (%)	
Primary	1994	1	2	Pedagogical council	80
				Principal	27
	(modal year)			Students and teachers	31
				Teachers	13
Lower secondary	1992	4	14	Pedagogical council	87
				School board	72
	(modal year)			Class council	66
				Students and teachers	55

TABLE 7. Level of initiatives of school structures

School structure		School level: Primary (average %)	School level: Lower secondary (average %)
Principal		27	30
Boards and councils	School board	–	72
	Pedagogical council	80	87
	Class council	–	66
	Head-of-class council	–	45
Teachers and students in co-operation		31	55
Teachers individually		13	42
Only students		2	23
Others		5	Parent associations – 4

TABLE 8. Existing initiatives of school structures mentioned in case studies

School structures		Case studies: α	β	μ	π	δ	λ
Boards and councils	School board		X	X			X
	Pedagogical council		X		X		
	Class council	X		X	X		
	Head-of-class council				X		
Teachers and students in co-operation				X	X	X	X
Students only			X				
Others:							
	Local community		X	X			X
	Parents			X			X
	Local authorities		X				

Among school actors, project initiatives were taken mainly by pedagogical councils, followed by school principals or school boards. In lower secondary schools, students' and teachers' initiatives were also relevant. In primary schools, the work was described as group work intended to plan the overall development of the project and evaluate each activity in order to introduce adjustments (Instituto de Inovação Educacional, 1992). In lower secondary schools, studies show that departments did not have a specific role.

In conclusion, it may be said that while pedagogical councils principally take project initiatives, case study results (Branco & Figueiredo, 1992; Mateus, 1995; Carvalho, 1997; Gonçalves, 1998) show that the choice of themes for the A-E projects results from informal negotiations between teachers, and between

teachers, students and heads of class councils. In these negotiations, power relationships are not clear and it is not possible to determine who has the upper hand. The pedagogical councils then structure the proposals.

As regards processes and products, schools are engaging in new pedagogical approaches, such as inquiries and interviews. Product dissemination takes place in a real-life context, thereby stressing communication and development of aesthetic values. It is also noticed that there is the need, on the part of the schools, to show that work has been done in the A-E domain. This is confirmed by the case studies.

The importance of the work carried out is not to be underestimated, both from the point of view of the teachers' commitment and the satisfaction and pride that it has brought to the students. However, the dimensions focussed on could be less product-related and more centred on the processes. Indeed, in accordance with the stated A-E goals, student development and a change in the teaching-learning and assessment procedures should be the core of this curricular area.

TABLE 9. Main characteristics and frequency of project processes and products

Characteristics of projects		School level	
Processes and products	**Project activities**	**Primary (%)**	**Lower secondary (%)**
Processes: conducting investigations and collecting data	Interviews	77	91
	Questionnaires/inquiry	78	90
	Field trips/outings	81	94
	Using videos	7	69
Products	Fairs	28	58
	Handicrafts	35	46
	Traditional games	57	55
	Photo journalism	68	88
	Magazines and newspapers	54	64
	Debates/exhibitions	53	75

Resources and procedures for implementing A-E activities

There is a tendency among the schools to complain about the lack of resources of any kind. Unsatisfactory working conditions, e.g. time schedules for meetings and lack of material and financial resources, are very often mentioned. Reference is also made to teacher training. Tables 10 and 11 show how schools are faced with these issues.

TABLE 10. Resources and their frequency of use

Resources	Primary	%	Lower secondary	%
Lack of resources	Computers	50	All-purpose rooms	20
	Sports facilities	46	Canteen	5
	Photocopying	48	Sports facilities	4
	All-purpose rooms	48		
Most-used resources within the school	Library/Resource centre	43	Photocopying	94
	Audio-visual equipment	44	Library/Resource centre	93
Resources outside the school	Transportation	63	Transportation	71
	Library/Media room	53	Library/Media room	69

In terms of external resources, namely local or regional community resources to which schools have access, besides those mentioned in Table 10, we have evidence that little use was made of higher education institutions or other lower and upper secondary schools. Some support was given by other community institutions, such as recreational associations and firms.

Human resources in schools primarily consist of teachers; as a consequence, their development is of utmost importance. This new curricular area constitutes a challenge for most teachers, as it demands engaging in co-operative work, developing new forms of communication and furthering their knowledge about interdisciplinary work. Nevertheless, teacher training happened more outside than inside the school, which means that schools were not prepared for the challenge posed by the reform. Schools resorted to training institutions to gather information and discuss their problems. This type of teacher training that has been taking place in Portugal seems to be unproductive. This fact alone can be a significant indicator of the lack of communication and dialogue in schools. Training should be more action-research based and data concerning teacher practices should be discussed. Qualitative results point in this direction.

TABLE 11. Characteristics of teacher training activities (average %)

	Primary		Lower secondary	
Teacher training activities	Within the school (%)	Outside the school (%)	Within the school (%)	Outside the school (%)
Acquiring knowledge concerning project development	5	55	39	78
Discussing and planning new methods and practices for AE that arise from teachers' experiences with projects	11	26	31	18
Developing projects as a consequence of teacher training activities	25	–	23	–

Project development

A-E projects, not being subject-limited, are intended to extend beyond classroom limits. The activities carried out can be described as connecting outside school activities (e.g. homework, field trips), extra-curricular activities and classroom activities; time-allocation is also another way of tackling the traditional rigid schedule (Table 11).

TABLE 12. Characteristics of activities and frequency

	School level			
Activities	**Primary**	**%**	**Lower secondary**	**%**
Time-allocation for project	Up to 10% of weekly schedule	52	Time was deducted according to the importance of each subject	63
	10 to 20% of weekly schedule	26		
	20 to 30% of weekly schedule	4	Time was evenly deducted from all subjects involved	30
	More than 30% of weekly schedule	2		
Locale where activities are developed*	Outside the school	78	Outside the school	78
	Outside the classroom and in the school	75	Outside the classroom and in the school	77
	In the classroom	65	In the classroom	58
Type of student work**	In the class, as a whole	85	In the class, as a whole	92
	Individually	76	Individually	62
	In groups	85	In groups	55

* Sometimes; ** Very often

Commitment to aims and goals

Survey data were organized so as to evaluate whether aims, consensual objectives in project promoting, objectives for project development and curriculum-centred objectives constituted a *continuum,* in order to find out their degree of accuracy regarding stated aims and goals. Tables 13, 14 and 15 address these issues.

With regard to the aims and goals enunciated in norms and legislation, both primary and lower secondary schools expressed strong commitment to those concerning acquiring and developing knowledge in an interdisciplinary perspective; approaching and treating relevant and current themes; and developing initiative, organisation, autonomy and solidarity. They also considered the following to be of relative importance: acquiring work instruments and exercising cognitive operations in a life-long learning perspective; and articulating theoretical knowledge of teaching subjects with real life situations.

There is a common lack of interest in integrating knowledge acquired via the *parallel school.* However, the attitudes of primary and lower secondary schools really differ as to what concerns sensitizing students to the importance of subjects related to the surrounding community.

TABLE 13. Commitment to norms and legislation

Commitment to the aims and goals enunciated in norms and legislation	School level	
	Primary	Lower secondary
Acquiring and developing knowledge in an interdisciplinary perspective	↑	↑
Acquiring work instruments and exercising cognitive operations within a life-long learning perspective	→	→
Sensitizing students to the importance of subjects related to the surrounding community	↑	↘
Approaching and treating relevant and current themes	↑	↑
Integrating knowledge acquired via the 'parallel school'	↘	↘
Articulating theoretical knowledge of teaching subjects with real-life situations	→	→
Developing initiative, organization, autonomy and solidarity	↑	↑
Sensitizing students to the preservation of national identity values, in a European integration context	→	↘
Exercizing citizenship	→	→

↑—Strong; ↘—Weak; →—Average

As the case studies approached the commitment to aims and goals of A-E projects indirectly, it is interesting to examine their data. A-E's main function was the introduction of active pedagogy into the school and the classroom. For Figueiredo (1998), teachers, when implementing this area, tend to show high concern about students' participation and choose activities to promote investigations and data analysis. Class work or activities also referred to are: group-work, increasing collaboration between students, and favouring the practical application of acquired knowledge (Carvalho, 1997).

The more important issues concerning project promoting, both in lower and primary schools, are those related to establishing a liaison with the community; accomplishing projects through team work; preparing oral presentations individually or in groups; developing aesthetic values; and stimulating knowledge of local history. The two types of schools radically differ in their attitudes concerning the finding of solutions to problems of minority integration.

Some of the analysed case studies present elements for further discussion on these issues. Figueiredo (1998, p. 174) considers school/community relationship an emergent process that needs clarification. She points out the fact that

TABLE 14. Priority given to consensual items considered in project promoting

	School level	
Issues	**Primary**	**Lower secondary**
Adhering to the curricular plan	↑	→
Establishing liaison with the community	↑	↑
Developing investigations and interpreting data	↑	↘
Accomplishing projects through team work	↑	↑
Accomplishing projects working individually	→	↘
Preparing oral presentations individually or in groups	↑	↑
Working out solutions for minority integration problems	→	↘
Stimulating environment protection	↑	→
Developing aesthetic values	↑	↑
Stimulating knowledge of local history	↑	↑
Contextualizing problems of adolescence	–	↑
Providing training for future work	–	↑

↑—Strong; ↘—Weak; →—Average

TABLE 15. Importance given to the stated objectives of project development

	School level	
Objectives of project development	**Primary**	**Lower secondary**
Capitalizing on school resources	↑	↑
Capitalizing on the human resources of the school	↑	↑
Changing the school image	↑	→
Obtaining external supports to the general functioning of the school	↑	↘
Improving teacher/teacher relationships	↑	→
Improving teacher/student relationships	↑	↑
Improving teacher/family relationships	↑	↑
Improving school/parent relationship	↑	↑
Improving knowledge of students' home context	↑	→
Improving achievement	–	↑
Improving school discipline	–	↑

↑—Strong; ↘—Weak; →—Average

although school practices 'have been incipient at this level, they have nevertheless shown a clear willingness to be part of the community and have revealed the capacity to see themselves as educational nuclei of the community'. Mateus (1995, p. 61) also notes that by 'having to choose between innovating or adhering to the essential curriculum items, teachers met their students' interests and needs'.

Schools give relevance to the objectives related to school/parent relationship, capitalizing on human resources and improving teacher/student relationships. In lower secondary schools, achievement and discipline are also considered. The experience reported in primary schools (Instituto de Inovação Educacional, 1992) stresses staff development: 'We have developed a process of teacher self-training [...] we have organized the school in a flexible way, using and maximizing everyone's specific knowledge and skills'.

Promoting global student development through interdisciplinary work, personal and social development and school community relationships

Student attainment of new competence in the scope of A-E implies active learning, productive rather than reproductive tasks, as well as promoting independence, creativity and co-operation. From this point of view, some characteristics of interdisciplinary work, personal and social development and school community relationships were analysed.

TABLE 16. Commitment of schools to activities intended to develop interdiciplinarity

	School level	
Activities intended to develop interdisciplinarity	**Primary**	**Lower secondary**
Exploring a theme/topic	↑	↑
Exploring situations	→	→
Developing connections between different kinds of knowledge and skills	→	↘
Solving problems	No evidence available	No evidence available

↑—Strong; ↘—Weak; →—Average

Schools interpret interdisciplinarity (Table 16) to mean developing a project under a common theme or topic implying group work. The overall management of the project is done in the classroom under the responsibility of the head of class teacher or by teachers whose subject-matter is most closely

related to the theme or topic. Case studies addressing this issue report teachers' statements: 'interdisciplinarity is still a pedagogical problem that not every one can solve in the best way, [...] it is a difficult demand' and 'as A-E has brought about the need to make space, time and skills interact, ... interdisciplinarity was almost forced into being a natural process' (Instituto de Inovação Educacional, 1992). The efforts towards interdisciplinary work are also referred to by Branco and Figueiredo (1992): 'students are confronted with themes, contents and activities in every subject that was part of A-E. There was negotiation'.

From the point of view of teachers' practices, the case studies analysed indicate differing impressions by the researchers. Indeed, Mateus (1995) states that 'interdisciplinarity was carried out to foster better pedagogical practices as regards content and goals'. Gonçalves (1998), however, points out that integrating knowledge and skills within an interdisciplinary perspective and in real life situations seems to be the least attained goal and he also observes that teachers are more preoccupied with the formal aspects of organizing A-E, such as meeting schedules, than with pedagogical aspects, such as articulating knowledge and skills or putting theoretical knowledge into practice. Figueiredo (1998, p. 174) raises further issues in this debate: 'in the planning of projects, interdisciplinarity was generally taken into account as a goal and not as a means of developing activities'.

Students' personal and social development

Students' personal and social development was a demanding feature of the curriculum for compulsory schooling. The development of cognitive and practical skills as well as attitudes and values is stressed in all subject matter syllabi. A-E also stresses this issue. Nevertheless, some aspects seem to be undervalued (Table 17), such as creativity, a critical mind in the field of collecting, processing and using information, and equity. The lack of emphasis on those issues is more apparent than real. Concerning creativity, the situation could be explained by the fact that teachers are very tied to syllabi and to old forms of assessment. Equity deals with social attitudes and democratic values, which demand everyday practice and accomplishment by the individual and by society. Being a relatively new goal established by the reform, its practice is still in its early stages.

TABLE 17. Commitment given by schools to priorities concerning students' personal and social development

	Commitment level	
Priorities given by schools	**Primary**	**Lower secondary**
Self-determination	↑	↘
Responsiveness	→/↘	→/↘
Creativity	↘	↘
Critical mind in the field of collecting, processing and using information	↘	→/↘
Group work	↑	↑
Interpersonal relations	↑	↑
Equity	↘	↘
Intelligent interest in technology	↘	→

↑—Strong; ↘—Weak; →—Average

In spite of the different priorities given by primary and lower secondary schools to each of the categories (Table 17), equal attention is paid to group work and interpersonal relations. Case studies also support this finding: 'There has been a change in the pedagogical relationship—the children started to have a say and thus the power to make suggestions' (Instituto de Inovação Educacional, 1992). The teachers have also 'acted to promote autonomy, to make their students responsible and to help them whenever they asked for it' and have 'tried to co-ordinate activities, articulating the several subjects and making the students understand that articulation' (Gonçalves, 1998, p. 60).

School/community relationships

Exploring school/community relationships could help students to become more knowledgeable about social responsibilities, to develop a capacity to reflect upon their own actions from the point of view of others, and to develop respect for diversity. The approach to these objectives by both primary and lower secondary schools was very similar (Table 18). Inasmuch as case studies give insights into community awareness a lack of school organization and management regarding this issue is still noticeable: '...all these innovations, aiming at promoting interdisciplinarity and school-community contact must confront a school that is enclosed and organised in vertical and disciplinary terms' (Carvalho, 1997, p. 17).

In terms of school/community relationships, there is strong evidence of collaboration between the school, the local authorities and parents' associations.

However, both primary and lower secondary schools identify a serious lack of communication and collaboration between the school and the local education authorities.

TABLE 18. Exploring school-community relationships

	Commitment level	
Insights into community awareness	**Primary**	**Lower secondary**
Active participation	↑	↑
Initiative	↑	↑
Identifying issues	Environment; Integrating minorities; Local history.	Environment; Contextualizing adolescence problems; Promoting knowledge of local history; Providing training for future work.
Discovering attitudes of individuals	→	→
Discovering attitudes of the public authorities	↑	↑
Debating concepts of environmental concerns	↑	↑
Equity	→	↘

↑—Strong; ↘—Weak; →—Average

TABLE 19. Importance given to student outcomes

	Student outcomes	
School level	**More important** *(from the highest to the lowest)*	**Less important** *(from the highest to the lowest)*
Primary	• Sense of responsibility • Autonomy • Critical reasoning • Problem-solving skills • Using extra school knowledge	• Decision-making • Acquiring knowledge • Organizing work and materials • Consolidation of working methods
Lower secondary	• Acquiring knowledge • Mobilising knowledge • Sense of responsibility • Autonomy • Mobilising extra school knowledge • Creativity • Respect for others • Acquiring aesthetic values	• Problem-solving • Co-operation in school activities • Critical reasoning • Organizing work and materials • Consolidation of working methods • Motivation

Assessment

As regards assessment, the survey design was intended to gather data on both project development and students' performance.

• *Project development*

Both primary and secondary schools have high response rates concerning the definition of a plan to assess A-E projects (65% for primary and 76% for secondary). The categories used were teacher commitment, parents' involvement, the impact of the project on school life, adequacy to the objectives, and feasibility.

• *Assessing students*

There is common agreement concerning assessment criteria and marking. Criteria are student-based and intended to assess overall student performance. The importance given by teachers to the different aspects of student outcomes are presented in Table 19.

There is a strong difference between the attitudes of primary and lower secondary teachers towards expected student outcomes. Primary teachers are more preoccupied by the acquisition of general competencies like critical thinking and problem-solving as well as personal development. Lower secondary teachers prize knowledge acquisition, mobilizing knowledge, and promoting a sense of responsibility.

From the set of competencies deemed the most important, we have found that teachers are not focused on knowledge but on cross-curricular competencies instead, as well as on aspects of the students' personal and social development.

Some of the case studies under analysis also give some insight into students' assessment and grading. Gonçalves (1998) states that, in the students' opinion, marks assigned to each subject-matter depend on the work they have done in the A-E project.

DIFFICULTIES

An overall view of the previously debated questions and results calls for the need to underline some of the difficulties encountered.

Metaphorically speaking, the introduction of A-E in the school as a non-subject-centred curricular area and the type of goals it aimed at was rather like 'a bull in a china shop'. As a consequence, it is understandable that it should cause considerable 'wailing and gnashing of teeth' in schools. The data collected support these assertions.

The data from lower secondary schools show that four sets of difficulties in implementation can be identified. The first set contains the items which were

considered to be the most difficult to overcome: syllabi management; external assessment; interconnecting the different subject areas; and school schedules. The second set, even though not as serious as the first one, poses the question: can schools address such curriculum goals without resources, teacher training, knowledge about curriculum development and management and lack of student motivation? The third set reflects the lack of communication between schools and the other social partners; nevertheless, it does not appear to be very difficult to overcome. The fourth one provides evidence that schools are very self-centred and that they do not evaluate the work they do in relation to the aims and goals of the education system.

In primary schools, the greatest difficulties concern learning materials, syllabi management and teacher mobility. Another set of difficulties revolves around the lack of collaboration between social partners and local education authorities. A different kind of problem, but stated at the same level, deals with carrying out open-space activities outside of the school. Considered as not so relevant are the interconnections among subject areas, teacher training and parental involvement. Posing no apparent difficulties are school schedules, student motivation, the collaboration of local authorities, teachers and other people from the school.

Figueiredo (1998) also points out that, in terms of adjusting school management plans to A-E, there is 'difficulty in defining a school policy in the context of an autonomy that is still being developed and in knowing to what extent one should go when including local and regional components in the curriculum'.

Conclusions

The aims and goals and the implementation mode make A-E a paradigm of innovation. Being an original element in the Portuguese curriculum for primary and secondary education, it brings into the school arena the very controversy it generates.

Schools are systems that tend to be resistant to change and it is necessary to be knowledgeable about them when trying to introduce innovation. If enough support is not provided to change and its agents, conflicts are eminent. In this context, Correia (1994) states that the implementation of A-E gave rise to an initial collective antagonistic response, characterized by defiance and apprehension towards this innovation. The analysis of the different positions of the school actors as well as the school organizational atmosphere stress that need for support. This support will develop knowledge and know-how to take advantage of the collective capacity to solve problems and define local implementation strategies.

The debate about complex and demanding educational change and the ways in which schools approach the intended curriculum is clearly referred to by the OECD in the following observations:

> There is often a gap between what is proposed and what is done. Sometimes, there is a breakdown, including a failure to involve teachers early enough in the reform process, so they feel no sense of ownership and are unwilling to alter classroom practice or adapt to modifications in school organisation. A mandate for new standards without providing the necessary resources may well be futile. Furthermore, most of the parties involved should be looking for the same objectives if they are to be successfully implemented. Teachers tend to talk about their intentions for their students, student motivation, the energy with which they approach their tasks, what students are learning and their own job satisfaction. They are unlikely to be concerned why a politician thinks they should change their methods. This is to illustrate the need for effective communication networks between teachers and politicians and, indeed, all those who have any say in the nature of educational provision (OECD, 1998, p. 27).

All the data and conclusions previously debated have led to a number of lessons being learned concerning the introduction of innovation in Portuguese schools.

Organizational and structural features of the schools

It is obvious that there are difficulties in connecting the schools' different structures, namely those aspects of communication necessary to the development continuum of an innovative project that requires dialogue and co-operation between all actors. In this context, the teacher training aspects analysed are a good example of this lack of a school-centred culture.

Teachers' role in curriculum development

Teachers traditionally see themselves and are seen as transmitters of predefined sets of information. However, our findings suggest some willingness to change this role. To a considerable degree, teachers show that they are involved in reflection on the general aims of the curriculum, both at school and classroom levels. This is evident in the study results.

Teachers now tend to give more emphasis to promoting cross-curricular competencies, as evidenced in the results of the external assessment of students in compulsory schooling (Amaro, 1997). Students' personal and social development has become more relevant to teachers. There is also evidence of teachers' openness to a closer relationship with students. Although interdisciplinarity still poses a lot of problems, the study results hint at a reflective commitment to decision-making concerning this issue. Development of aesthetic values has emerged as an outcome of A-E projects. This supports the assumption that teachers' practices are becoming more reflexive and proactive.

School-community relationship

There are mixed feelings regarding this issue. On the one hand, schools are more interested in the collaboration of parents and local authorities. On the other hand, schools have not established closer links with local education authorities, which may be explained in terms of the decentralization process currently under way.

This on-going struggle in the Portuguese school arena, which is intended to accomplish innovative goals, aims at providing individuals with education that is not a means but an end in itself. In terms of student outcomes, which are essential for understanding the impact of this innovation, existing data and debate so far have fallen short of conclusive results. There is a need to further analyse this question and design follow-up procedures to verify to what extent innovation has met and will continue to meet the desired education system goals as expressed by students' outcomes.

Afterword: entering the millennium with new educational policies

Five years ago, the newly-elected government proclaimed, regarding education, that 'it is the role of the state to define directions and goals, monitor actions, support initiatives and foster professionalism, keeping up the fight against inequality and ensuring the fulfillment of the social and cultural role of education—a collective and individual good at the disposal of every person, of society (Portugal, Ministry of Education, 1998, p. 5).

Principles guiding the central administration policies for education, as regards autonomy, diversification and openness to institutions have been enunciated. Autonomy is emphasized because it is interwoven with accountability on the part of schools and all other structures in educational administration (Curriculum Development Departments, National Examination Board, Regional Education Authorities, General Inspectorate of Education). This autonomy implies a clear delimitation of competencies and consequent loss of ambiguity, hence a better capacity for implementing, supporting and articulating plans and projects designed by the different management levels of the education system (national, regional and local).

Diversification concerns respect for the specificity of contexts and will tend to ban the uniformity caused by normative legislation, with the exception of 'granting the conditions for equity in the treatment of educational targets and agents' (ibid., p. 24).

Openness to institutions intends to adjust the logic of the ongoing reform programme, as regards establishing partnership between schools and the different social, cultural and economic actors. School is once again defined as 'not only a place to foster instruction, but also as a privileged place to foster education in general; the place which, in partnership and systematic articulation with other community institutions, becomes a reference in educational life' (ibid., p. 25).

As a result, the government is committed to: enacting legislation concerning the decentralization of the Ministry of Education and school autonomy; fostering educational research initiatives; implementing several national programmes for the study and expansion of innovative practices in education; supporting multicultural approaches to education; reinforcing territorialization of education and diversifying teacher training programmes.

As regards curricular reform, the central administration has made a visible effort to become an *interface* between what is announced in the reform and the results of its implementation in the schools. Its aim is to 'put the school at the centre of the Portuguese population's concerns and interests' (ibid., p. 23).

The best example of this was the debate on the curricular plans within the educational community, which has been exemplary as regards the process and products. The whole process obtained, from the educational community, knowledge of goals, procedures and practices in order to induce new forms in curriculum development, new school organization modes, new teacher training approaches (e.g. student-oriented teaching) and the development of new teaching and learning materials. As a result, new curricular organization models have been experimented and enlarged to create sustainable knowledge. At the elementary level, these experiments include the aggregation of several subject matters into wider curricular areas and the organization of new teaching methods (e.g. team teaching), as well as a new approach to A-E.

This approach was influenced by the outcomes of the above-mentioned studies on A-E. It aims specifically at: a professional development culture of curricular planning based on adjusting the curricular guidelines to each school context; the fostering of school self-evaluation policies (including the analysis of student outcomes); the creation of a local education policy that can effectively involve families and other social partners.

A-E is now considered as a project area—the project can take one or more years to be developed. It should be carried out in accordance with the students' interests, be essentially aimed at developing responsibility, foster citizenship and be based on the articulation of subject knowledge. The project will have a teacher as tutor, its monitoring will include a specific time frame and its assessment will focus on the acquisition of knowledge, competencies and attitudes related to the above-mentioned areas. This new approach to A-E should be implemented in the school system from 2000/01 onwards.

Notwithstanding the controversy generated, A-E seems to have had a positive effect on students' civic values. The preliminary data from the school questionnaires of the survey carried out in Portugal, in May 1999, in the context of the second IEA Civic Education Study (developed from 1994), reveal that this area has contributed significantly or very significantly to the students' acquisition of civic attitudes (80% of 146 schools involved). Taking into account the preliminary analysis of student performance, the data seem to be positive.

Bearing in mind that all significant changes in the system can only materialize through the small, individual efforts of teachers—the ones responsible for the real implementation of the curriculum—a final question must be asked: Can the proclaimed lack of resources and training be no more than a veil of pessimism used to mask deep feelings of ambiguity, resulting from any number of factors such as extreme work pressure, not being able to cope and a lack of dialogue between those involved in implementing innovation?

Annex: insight into specific A-E projects and practices

The analysis of the impact that the A-E innovation has brought to Portuguese schools, although already dealt with in the monograph, would not be complete without delving into some concrete examples of past and present practices.

The objective in presenting these examples is twofold: on the one hand, it gives a better insight into the A-E projects analysed in the case studies which support the study that has just been discussed; on the other hand, it captures the environment of some projects currently being developed in schools and considered of national relevance in terms of quality and effectiveness.

Three different projects are presented, one of which is not the result of research but a description based on information from the school, collected from documents and statements by people involved in the projects. As the presentation directly uses this information, it is referred to as *Naïve* data gathering.

The presentation of the A-E projects *Plátano* and *Oleiros* is based on the authors' descriptions and follows the taxonomy used. Context and respective data interpretation are presented in accordance with the authors' research methods.

1. THE PLÁTANO PROJECT

Context and developments

The *Plátano* Project was developed at a school in a semi-urban environment (2,000 to 10,000 inhabitants) in the southern part of Portugal during the 1994/95 school year. The school, with an average population of 700 students, caters for grades 5 to 12. The students' socio-economic background was determined by their parents' occupations or trade.

Only 38% of the teaching staff had had initial training. In organizational terms, the educational goals comprised more than one school year and were part of a plan—the School Educational Project (SEP).[18] The basis for this plan was a diagnostic of the main problems affecting the school's local environment. The activities included in the SEP, either compulsory (A-E) or optional (extra-curricular activities), were principally suggested by the subject-area departments and had their origins in the school's specific concerns. To support the development of A-E, the school designed documents that identified methodologies and theoretical aspects.

The *Plátano* Project aims at preparing young people for the responsibilities of both working and social life. It includes the teaching of values for the acquisition of social skills that could foster the development of greater self-esteem, better relationships with others and with social institutions and organizations. The A-E project was built

around a comprehensive topic that was divided into sub-topics, each one being a theme for each school grade. The topic adopted in *Plátano* was the preservation of nature and the learning goals were defined in terms of the dimensions of acquiring knowledge and skills and becoming autonomous.

According to the different school grades, the project followed specific designs and was negotiated, in each school grade, on the basis of a significant number of curricular subjects. These designs gave different emphases to the above-mentioned dimensions. For example, the sixth and eighth grade designs were as follows:

- in the sixth grade, they underscored the organization of the knowledge resulting from research/data-gathering done by students; Natural Science, History, Music, Physical Education and Mathematics were the subjects that contributed most to its development;
- in the eighth grade, the sub-topic chosen was 'The Environment—Protected Landscapes' and each of the subject areas involved (Science, Art, Geography, and Mathematics) designed a specific plan. The Maths plan (Table 1) is representative of this work.

TABLE 1. Maths plan for the topic 'The Environment – Protected Landscapes'

General aims	Objectives	Activities	Timing	Assessment
• Highlighting the consequences of human action on the environmental heritage • Articulating theoretical knowledge from subjects with its practical application • Interconnecting knowledge and skills: integrating the community; personal and social development	Data gathering Organizing data Doing graphics Compiling statistics	Analysing and organizing data Experiments and observations Writing reports	Fifteen hours of the school year's schedule for mathematics	• Self-assessment • Assessing materials produced by students • Mid-term and long-term assessment of the quality of materials produced by students • Evaluating to what extent activities met the general aims

A-E activities were co-ordinated by the class council and/or the head of class. The multidisciplinary approach to the project was shared by all the teachers involved. The most emphasized aspects of the planning were the assessment of the project and of the students, the publishing of the outcomes and the human and material resources needed for its implementation.

Weaknesses of the project

In Figueiredo's view (1998), the greatest difficulties are related to the development of the project's interdisciplinary perspectives. The negotiation process

between the teachers of the different subjects is also considered difficult to manage. The fact that there is no allocated time in the timetable for this disciplinary area makes project development extremely difficult. The dimensions in which A-E is assessed are described as not easily implemented.

2. THE OLEIROS PROJECT

Context and developments

This project was developed in a rural lower secondary school in the 1995/96 school year. The school had 384 students, most of whom were not very motivated for learning, although they would rather go to school than work in the fields. They came from a low socio-economic stratum: most parents worked in agriculture; some were employed in the construction industry and others in services. The students were sociable and disciplined, obeying the school rules. The school had thirty-seven teachers, 65% of them qualified. Parental involvement in school activities was very weak.

The theme for Project Oleiros—Discovering Our Country—came from the students' suggestions, expressed in a survey at the end of the previous school year. The Pedagogical council defined the guidelines for the development of the project, namely: goals for personal and social development, school-community relationships and interdisciplinarity; time allocated in the school's schedule; articulation between each class' projects and each grade's curricular contents; and organization of multidisciplinary projects.

Each class chose a sub-topic—a district of the country—to be developed. The Heads of Class council ensured that all the districts of the country would be represented. It also defined the requirements for the final presentation of the projects: an exhibition of the students' work, objects and documents from each district and a show to present the districts—traditional costumes, pottery, main products, main occupations (industries, farm production, etc.). The planning of the subjects, in accordance with the school system's compulsory grades, is exemplified in Tables 2 and 3.

In general, assignments took an average of 101 hours of schoolwork in each fifth and sixth grade class and 50 hours in each seventh, eighth and ninth grade class. The project assessment comprised its formative dimensions, student assessment and writing a report.

Strengths and weaknesses of the project

Gonçalves (1998), in his global appreciation of the development of the AE project, points out:

In the design and implementation process of the A-E project one verifies the active role of the Class councils and the Heads of Class councils whose influence is stronger than that of all other school structures. The Class councils are, par excellence, the nucleus of the development of the project. However, there are difficulties, such as the articulation of the project (topic, sub-topic) with the curricular contents of some of the subject areas and the development of interdisciplinarity.

TABLE 2. Goals and activities in grades 5 and 6.

Subjects	Goals	Activities
Portuguese	Discover aspects of Portuguese oral tradition Collect texts of Portuguese oral patrimony	• Writing letters asking for information on the region • Collecting texts • Compiling texts • Writing texts
History	Identify the main historic monuments	• Analysing collected material
	Get to know the cultural reality expressed in habits and traditions including traditional gastronomy	• Writing texts
French English	Develop oral and written skills	• Translating sentences • Writing captions for pictures and posters
Mathematics	Organize information in frequency tables and bar graphics Recognise the need to organize information to study real life situations	• Organizing and analysing information
Science	Learn about the diversity of environments and living beings in the district Instill responsible attitudes towards the protection of nature Get to know the traditional dishes of the district Point out some unhealthy eating habits of the district	• Organizing and analysing information
Music	Develop a taste for Portuguese traditional music	• Vocal audition and execution
Art & Technology	Integrate manual skills Make transparencies and powerpoint documents Understand structure as support in the organization of natural form Build tri-dimensional forms taking their structure into account Identify the elements that define or characterize a form (light, colour, line, surface, volume, texture and structure) Consider colour in creating the meaning of messages Re-use and re-cycle materials	• Collecting information on pottery and cork traditions • Copying / painting the district capital's flag • Making the district map • Writing invitation cards/letters to the community
Physical Education	Sensitize students to open-air activities Enable students to have contact with uncommon sports activities Stimulate healthy competition that develops a spirit of understanding and solidarity	• Playing traditional games
Moral and Religious Education (Catholic)	Develop students' interest in religious art and practice	• Analysing documents

TABLE 3. Goals and activities in grades 7 to 9

Subjects	Goals	Activities
Portuguese	Identify the Portuguese cultural patrimony Make the patrimony known to the public Improve writing skills Foster inter-personal relationships in the context of school correspondence	Collecting and researching legends, tales, historical elements
Mathematics	Organize information Interpret and process statistical data	• Collecting statistical data • Collecting data on the last population census
History	Foster research habits	Collecting data about historic elements, monuments and traditions from the region
French English	Learn tourism-related vocabulary in the target language	Designing tourist guidebooks
Geography	Know the level of development and the geographical area of the district	Collecting and researching photographic documentation
Science	Identify the relationships among living beings in a particular ecosystem	
Art	Demonstrate a sense of aesthetics	• Producing a notebook with the collected research products • Illustrating and designing the cover for the notebook • Designing brochures • Making the district map
Physical education	Get to know two sports clubs in the district	

Among the positive aspects, the following should be underlined: developing autonomy, accountability and decision-making among students. Mobilizing teachers and developing interpersonal relationships is another positive aspect that has been stressed. Assessment of both the project and the students is still in an embryonic stage as regards the proposed A-E goals and methodologies.

Naïve data-gathering

Since a lot of information on A-E projects is in the air it was decided to examine one of them in a more informal, down-to-earth way. Reports, videos and Internet sites provided the first insights into the project described below. The school was then contacted to provide further information, which was obtained through interviews with principals, teachers and students, some of them via e-mail and phone calls.

3. THE *POR MARES* PROJECT

The project began in 1998 in a secondary school located in a small city (5,000 to 10,000 inhabitants) in the interior of the Algarve (Southern Portugal). The school has

338 students, in grades 10, 11 and 12, who come from an average socio-economic stratum. The genesis of the project was the decision by a group of teachers, confronted with the lack of computers and other technological resources in the school, to make a proposal for a National Programme on Technologies (Nónio Séc XXI).[19] The project proposal aims at enabling the school, teachers and students to use information and communication technologies (ICTs) to the fullest. It was purposely designed to have a strong inter- and multi-disciplinary component and, using electronic means, to promote co-operation within the school and between schools.

Using the metaphor *Through oceans never sailed before*[20] (*Por Mares*) it aims at (Fernandes, 1999):

- *Making Os Lusíadas*[21] *(Portuguese culture and language) known (to a vast audience) via the Internet;*
- *Approaching the issues raised by Luís de Camões' epic in an interdisciplinary perspective;*
- *Facilitating the production and publication of students' work under teacher supervision, in order to develop skills in the area of research and investigation, as well as of presentation in the design and writing of texts;*
- *Mobilizing the skills acquired in the classroom/specific subject context and ensuring their interaction with other skills towards an integrative personal culture;*
- *Working in active co-operation, showing respect, openness and dialogue capacity vis-à-vis the views and values of others;*
- *Fostering inter-school co-operation;*
- *Developing communicative competence in the Portuguese language;*
- *Fostering a sense of discovery*
- *Creating the necessary conditions for interdisciplinarity.*

The framework of the project

The project design is anchored in the metaphor '*Por Mares*' as a means of developing interdisciplinary work and innovative methodologies for acquiring knowledge (inquiry, problem-solving, collecting, analysing and reporting data, debates, role play, etc.), through the Internet, and through the school network:

- The metaphor – *Por Mares*
  The metaphor 'Through oceans never sailed before' as an A-E topic allows the inclusion of any curricular content and interdisciplinarity. 'The metaphor permits every approach—'anything is possible'[22]—meaning that everybody can start with any kind of issue and then explore it in the context of the stated goals of the project.
- *Os Lusíadas*
  It was thought that the epic work of Luís de Camões would make an excellent starting point, due to the multiplicity of themes it approaches, its importance in the Portuguese culture, in particular, and also because it has helped to promote Portuguese literature all over the world. *Os Lusíadas* provided a good opportunity to deal with a vast set of issues of universal and current relevance.

- The Internet
  The Internet is the ideal place to develop this project: a virtual site on the World Wide Web accessible in all partner schools, in Portugal and in other countries, breaks the barriers of space and distance, making possible a central platform of interaction between all the participants.
- The school network
  Other schools were invited to help with the graphic design of the *Por Mares* site.[23] A class of 8th graders built the entire graphics—the logo, the icons and site design. As one teacher stated: 'From this perspective, we achieved, right from the first phase, one of our goals: inter-school collaboration'.[24]

Methodology

The central theme of *Os Lusíadas* is Vasco da Gama's journey to discover the sea route to India. The work features Portuguese history, classical mythology, and the poet's own reflection on humanistic themes. These different and complementary aspects of the epic work facilitate an inter- and multi-disciplinary approach. Therefore the project was structured around literary, historical, philosophical, sociological, scientific and artistic routes, as well as debates. Thinking of the vastness of the Portuguese-speaking world, spread from East to West, Luis de Camões said: 'the sun sees it first right when it rises, it sees it also in the middle of the hemisphere and it is the last it sees when it sets'.[25] Therefore, we can suggest open routes where teachers and students from the whole world can make their countries, their regions and cultures known.

The activities develop in different but complementary ways: publishing works, exchanging e-mails, real-time debates, periodic meetings by IRC (Internet Relay Chat) and forums. Good quality work by students is published throughout the different project routes. This practice enables students from different schools and/or countries to be closer, making it easier for them to interact about realities or themes that interest them. This interaction can be adequately monitored by the teachers.

Among the debates of particular interest already organized was the Internet meeting that took place on 21 May 1998, exactly 500 years after the arrival of the first Portuguese in Calicut (Kerala, India), and which involved teachers and students from schools and universities in Portugal and Brazil. In 1998/99 two debates for teachers were also held: one at the beginning of the school year, to plan activities concerned with the project; the other on 22 April 1999 on the 'discovery' of Brazil.

The *Por Mares* site aims to become a virtual classroom, where teachers and students enrol with their e-mail addresses. Doubts, questions, ideas and reflections can be sent to the addresses listed and, through *a virtual interactive community* of all the participants, ideas and knowledge may be shared in a process of mutual learning and collective enrichment.

Example: the Literary Route[26]

It is important to refer to the *Literary Route* and to the potential of the project as regards the development of communicative skills and the consolidation of young people's attitudes and values towards healthy and intercultural relationships.

As literary routes are *sailed*, several types of texts are available, all of them produced by students and therefore accessible, in terms of language, to other students going through a similar route in the discovery of the Portuguese literary patrimony. These texts are:

- informative-descriptive texts on Luís de Camões' epic, on the author, as well as on historic characters presented in this work;
- literary-linguistic comments;
- glossary and notes on the epic text;
- comparative analysis of extracts from *Os Lusíadas* and texts by other authors from different periods and diverse literary types as, for example, the character of King D.
- Sebastião in *Os Lusíadas* and in *Mensagem* by Fernando Pessoa,[27] or of the argumentative speeches by Inês de Castro in *Os Lusíadas* and by Madalena Vilhena in the drama *Frei Luís De Sousa* by Almeida Garrett;[28]
- expressive-creative texts resulting from reading the epic or reflecting on its values.

In this 'route', not only is there a variety of texts but also a variety of grade level classes that produce them. It is felt that this project is designed in such a way that it attains the curricular goals, permitting these goals to be fulfilled through classroom work.

It is important to underscore the role of the teacher during this process, as (s)he is the one who designs the strategies, implements the activities and monitors the students in every stage of the written work. The teacher's role is considered particularly important in the following two stages, namely: a) researching, selecting and processing information; and b) producing a new written text (Fernandes, Labisa & Matias, 1999):

a) researching, selecting and processing information
It is a very important stage: the students have to acquire this knowledge soundly as it enables them to move on in the acquisition of further knowledge in a progressively autonomous way. And although the Internet is a means available in practically every school, it is the role of the teacher to motivate the students to use it and to make it an important tool for their cultural enrichment.

b) producing a new written text
The production of a written text that should be designed to perform a real social function of communication with others and not only to give the teacher the necessary 'hints' about the knowledge acquired. It is the most important issue at this stage and it is here that the teacher plays a very important role.

Discussing the impact of the routes

Participating in assignments that allow interaction with others beyond the class community is stimulating for the students who are motivated to apply themselves to their tasks (this has been verified by the participant teachers). Moreover, having one's work selected for publishing in any of the routes contributes to the student's growing self-esteem and forces her/him to revise and improve the original text, stimulating reading and writing skills.

The *Por Mares* project is also about using e-mail and participating in on-line debates. These means also contribute to consistent and progressive mastering of communicative competencies in the Portuguese language. Moreover, they contribute to the personal and social development of young people, in facilitating contact with Portuguese-speaking people all over the world.

Students' and teachers' perspectives

The three interviewed students consider A-E as a work area equal to the other subjects. They find A-E very important for learning how to work in groups and think it fosters creativity. The way in which A-E projects have been developed has enabled the interviewees to contact other schools in Portugal and abroad, promoting the use of the Internet and networking with other schools. Work related to A-E varies from subject to subject; it is easier in science and more difficult in foreign languages. The students think that the teachers of science are more enthusiastic and approachable, and easily articulate the A-E topics and work with the curricular contents. They consider that A-E has given them sound knowledge about science and about the historical and cultural heritage. They point out the potential that A-E has to appeal to alienated students, but see difficulties in managing time and the lack of articulation between the curricular contents and the tasks that some teachers demand for A-E.

The two teachers interviewed point out that the metaphor *Por Mares*, as an A-E topic, allows the inclusion of any curricular content and interdisciplinarity. A-E activities have had external support from a research team that provides the project with research advice, as well as from national programmes promoting good practice—*Programa Boa Esperança* (Programme Good Hope).[29] As a result, the whole school community feels very motivated by this work. Local, regional and national recognition has been very important for the expansion and sustainability of the project.

Expanding the project

The *Por Mares* project contains in itself mechanisms to develop approaches to ICTs that will surely benefit the participant schools as regards the use of these technologies.

The Internet site of the project received more than 10,000 visitors. *The Good Hope*[30] project is to expand *Por Mares* and make it increasingly a project of the Portuguese-speaking education community. The goals for future developments of *Por Mares* are:

- Create *Por Mares* nuclei in the schools where the project already exists so as to adequately structure and monitor the participation of teachers.
- Involve more schools, teachers and students from the Portuguese-speaking community (Instituto de Inovação Educacional, 1999).

Notes

1. Introduction to the article 'Pequeno diccionário para o Ano 2000', written by Guilherme D'Oliveira Martins, in *Jornal de Letras Artes e Ideias*, Ano XIX, no. 764, 12–20 January 2000, p. 31.
2. Group Fraústo—the committee in charge of the proposals for the new curricular plans and composed of nationally recognized educational experts, some of them from the Ministry of Education. The group was chaired by Fraústo da Silva and included Roberto Carneiro, Manuel Tavares Emídio and Eduardo Marçal Grilo.
3. Pedagogic and administrative school structures:
   Class council—composed of all teachers of each class, and led by the head of class;
   Pedagogical council—composed of all heads of department plus the head of the executive board, the students' representatives and the parents' representative;
   School council—composed of the representatives of teachers, other school staff, of students, parents and local authorities;
   Head of class—teacher in charge of the class. He/she establishes the relationships between the teachers and the parents;
   Heads of class committee—composed of all heads of class plus their co-ordinator;
   Executive board—composed of 3 to 5 teachers who run the school;
   Departments—composed of the teachers teaching a particular subject or subject area. Sometimes two or more subjects are linked in the same department, such as English and German, Engineering and Technology.
4. As quoted in Stoer & Araújo (1991, p. 205): 'Taking into account the concept presented by Boaventura Sousa Santos (1985, p. 871) based on the definitions presented by Immanuel Wallerstein and Andrew Janos of semi-periphery and dynamics of social change, respectively'.
5. The studies mentioned aimed at:
   a) the comparative study of the EC countries' curricular systems;
   b) reinterpreting the educational aims and goals in the light of the Education Act;
   c) identifying the socializing function of the school in a changing world;
   d) defining the bases for a new pedagogical relationship;
   e) analysing the integrative sense of educational acquisition;
   f) relevant aspects of the core curriculum—Portuguese, mathematics, history, social studies and science.
6. This reference to the Education Act is not correct. The Education Act was published in 1986 and set out the guidelines for the structuring and organizing of the school system. The complete reference to the cross-curricular area of personal and social education is in the Decreto-Lei No. 286/89, 29 August 1989.
7. According to the *Normative Despacho*, 142/ME/90 of 26 June 1990.
8. That is to say, knowledge and skills acquired outside the school context via the media, social interaction and new technologies (Internet, etc.).
9. Until now both teacher training and the new curricular guidelines have been unable to alter this *status quo*, in spite of the good practices that can be found in schools.
10. This document reproduces the written text of the Education Act, Law no. 46/86 of 14 October 1986, published in *Diario da República*, I Serie, no. 237, 14 October 1986.

11. Regional components: exploring themes/topics or planning project work using the community as a more knowledgeable source.
12. Conselho Nacional de Educação (CNE) [National Education Council]—a group of recognized experts in education from universities and union representatives (teachers and parents) who appreciate and give advice about the education policies being developed.
13. EB 2/3 designates a lower secondary school, e.g. a fifth grade to ninth grade school.
14. An example of this is SIQE (System to Improve Quality in Education), from the Institute for Educational Innovation, which finances research projects with a yearly budget of US$250,000.
15. The description of cultural school can be found in this monograph, under *Área-Escola: paradigms and controversies*.
16. FOCO: in-service training of teachers funded by the EC (PRODEP).
17. The national survey completed the cycle of works on A-E carried out by the IIE, which was responsible for designing the curricular guidelines and for developing studies in this area.
18. School Educational Project—document planning educational action that states the manner in which the school autonomously organizes its activity. Theoretically speaking, the SEP, according to Sarmento (1999), is 'a dynamic element displayed in educational action and resulting from the interpretation and political decision revolving around options for the life of the school'.
19. Nonius Project: National programme to support the development of Information and Communication Technologies in the school system.
20. A famous line in *Os Lusíadas* (Canto I—I) in the edition Lello & Irmão, eds. (1970, p. 1121).
21. The internationally recognized masterpiece of Portuguese literature, as described by Guerra Da Cal (1989): 'The epic of Lusitanian navigations and discoveries found sublime and eternal expression,... in the epic *Os Lusíadas* (1572—date of the first edition) by the poet-soldier Luís de Camões (1524-1580), who has the highest claim of Portuguese letters to universality and who, in the words of Schlegel, *is worth an entire literature*'.
22. Statement by the teacher responsible for the A-E project in the school.
23. The '*Por Mares*' site on the Internet is:
http://educom.fct.unl.pt/proj/por-mares
24. Statement by a teacher presenting the project in a forum.
25. A line in *Os Lusíadas* (Canto I – VIII) in the edition Lello & Irmão, eds. (p. 1123).
26. Presentation by the teacher in charge of the development of the literary route.
27. Fernando Pessoa (1888-1935) is considered the greatest Portuguese poet since Camões. Pessoa wrote under several names, giving to each persona a distinctive style that represented a different aspect of its own personality (Guerra Da Cal, 1989).
28. Almeida Garrett (1799-1854) who had been exiled in France and was influenced by French neo-classicism, had a clear conception of the essential values of the Lusitanian genius.
29. A nationwide programme (1999-2001) for the promotion of educational quality. This programme supports the consolidation and development of successful practice, and knowledge about the dynamics that impede this, thereby serving to improve educational quality.
30. From 'Cape of Good Hope' in South Africa, so named by the Portuguese during their discoveries.

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I N N O D A T A
M O N O G R A P H S

This series of case studies of selected innovative projects and approaches in education continues the long tradition of the International Bureau of Education (IBE) of reporting in a variety of ways on change and innovation in educational practice. The series should be seen as complementary to INNODATA, the Bureau's databank of educational innovations available on the Internet. The monographs provide readers with more detailed information on selected innovations from the databank which have had considerable levels of success to date and are considered to be of great interest and relevance to education policy-makers and practitioners around the world. The case studies are written by individuals who have close experience with the innovations being described, in some instances having been directly involved in their creation and development.

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The IBE wishes to express its thanks to Gertrudes Amaro for the preparation of this case study.